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November 12, 2006

In re Application of	Caldwell et al.
Serial Number	09/761,604
Filed	1/16/2001
Title	Natural Language Product Comparison Guide Synthesizer
Examiner	Kindred, Alford W
Art Unit	2172
Confirmation Number	5820
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REPLY BRIEF

In response to the Examiner's Answer mailed 09/12/2006, the Applicants submit the following Reply Brief. The Reply Brief is submitted under 37 CFR 41.41 not to substitute but in addition to the Amended Appeal Brief filed on 10/15/2006.

This Reply Brief paper includes, as per 37 CFR 41.37(c), with each item starting on a separate page:

- Identification page (this page)
- Status of claims page
- Grounds of rejection to be reviewed on appeal
- Argument pages addressing the Examiner's Answer to the Appeal Brief

STATUS OF CLAIMS

Claims 1, 3, 5 through 11, 13, and 14 were finally rejected by the Examiner and are appealed.

Claims 2, 4, and 12 are cancelled.

All amendments have been entered.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1, 3, 5 through 11, 13, and 14 stand finally rejected under 35 USC 103 (a) as being unpatentable over Tavor, US # 2001/0032077A1 in view of Mikurak, US 2004/0064351A1.

Claims 1, 3, 5, 6, 7, 8, 9, 10, 11, 13, and 14 do not fall and stand together. Claims are argued separately because of different claimed subject matter and different arguments against claims by the Examiner.

REPLY BRIEF

ARGUMENT

Response to the Examiner's Answer mailed 09/12/2006

In addition to the Amended Appeal Brief filed on 10/15/2006 and containing full arguments of the Applicants in response to the final rejections by the Examiner, this Reply Brief is submitted under 37 CFR 41.41 to provide additional arguments to respond to the Examiner's Answer.

The following two elements or features are part of the Applicants' method and claims:

1. A specific notion of "user profile", which refers to a **predefined collection of desired product feature values**. A user profile can be considered a specification of an "ideal product" for a certain class of customer (e.g. "snapshot taker"). An implementation of the applicants' method for a given product category results in an explicit definition of a small, finite number of user profiles, each of which is immutably defined as a collection of desired product feature values, and to each of which a set of "user profile text snippets" is associated. In contrast, the very different notion of "user profile" referred to by the Examiner with regards to the Mikurak reference is not a user profile as defined by the Applicants' disclosure, but refers to any sort of personalized data that can be collected or inferred for a particular customer, and is dynamically constructed from the information collected about an individual user vs. the Applicants' method where the user explicitly chooses a user profile.

2. The notion of generating a "recommendation", which refers to an explanation of **how the feature values for a specific product relate to the** predefined user profile chosen by the customer, which is designed to **convince the customer of the appropriateness or inappropriateness of a product for them**. To qualify as a recommendation in this sense, a generated natural language text must change its form and content according to the user profile selected by the customer, the features of a given product, and the relationship between these two facts – for example, the generated text might say "this product has Feature A, which is good if you're a snapshot taker", OR "this product has feature A, which is not good if you're a professional photographer". To put it another way, the text cannot simply recite the features of a given product; it must *explain how those features relate to the specific* predefined user profile.

The Applicants maintain that, as argued in detail in the Appeal Brief, neither the Tavor nor the Mikurak reference, nor any combination of these two references teaches either of these elements of the present invention. This is being reiterated here briefly, for these two features, respectively, as follows:

1. Neither Tavor nor Mikurak teaches the relevant notion of "user profile" – Mikurak teaches "utilizing the customer's profile to prioritize the features of a group of similar, competing products", where the "customer's profile ... may be developed from many sources including customer input, ... customer's purpose of the sale, customer's shopping habits, etc.". However, this definition of "customer's profile" differs from the applicants' notion of "user profile", as it does not correspond to a collection of desired product feature values – nor does Mikurak teach any detailed method of deriving such a correspondence. Tavor also teaches no notion of "user profile"; therefore, neither reference teaches this feature of the Applicants method and it cannot be derived by combining them.

2. Neither Tavor nor Mikurak teaches the generation of "recommendations" in the proper sense – Tavor's method generates the same text for any group of selected products, regardless of the needs of the user who selected them (merely saying that "A is sweeter than B" does not make any reference to whether the customer *wants* something more sweet or something less sweet). Mikurak teaches "prioritiz[ing] the features of ... products ...", but again, *prioritizing* features is not the same as indicating the importance of specific feature values to specific users – much less explaining this in natural language as taught by the Applicants' method. Therefore, neither reference teaches the feature of the Applicants' method, and it cannot be derived by combining them.

In addition to these arguments, and more detailed treatment in the Appeal Brief, the applicants maintain that specific parts of the Examiner's Answer are in error:

On Page 5, the Examiner stated:

- "examiner ... reiterates that Tavor's teachings of general description using phrases that are keyed to particular products, includes the user preference as well as profile data. Since the user, in the Tavor reference, is the one that inputs the desire for product information,

the reference clearly includes requests for the most relevant data/information based on preferences, as illustrated in applicant's claim language."

The Applicants point out that the user's selecting one or more products is not the same as the user's indicating specific desired product feature values, or a collection thereof (a "user profile" as defined by the Applicants). Therefore no *user profile* is present, and no *recommendation* can be generated.

On Page 6, the Examiner stated:

- "... examiner maintains that the Tavor reference which teaches the composing of attributes (i.e. big, bigger) in relation with the comparison of related products and rendering results. This clearly illustrates the generating of text recommendations based on a user's action as indicated in applicant's claim language."

As argued above, the Applicants maintain that this type of text generated by Tavor's method does not constitute a *recommendation* based on a selected *user profile*, but rather a simple enumeration of feature values, which will be presented with the same form and content regardless of the particular user that is requesting it.

On Page 6, the Examiner also stated:

- "Tavor, in particular, teaches the description of products in fluent text (i.e. "a product has a blue color ...") which is related to the user's preference or potential preference, as well as a recommendation as described in applicant claim language."
- "Second, the fluent recommendation language, whether it be more 'human-like' or not, is still a recommendation via a phrase or snippets, based on a user preferences, as taught in both Tavor and applicant's teachings."

Again, the Applicants maintain that Tavor's texts are neither *recommendations*, nor are they composed with any reference to a *user profile*.

Finally, on Page 7, the Examiner stated:

- "... examiner maintains that Mikurak reference teachings of comparisons between different products and services and rendering recommendations, whether it be a phrase, snippets, characterization or what have you, it clearly includes a response to a user's query (i.e. personalized search) as illustrated in applicant's claim language."

text, and if relational compare is used, "construct_compare_text" will call "construct_relational_compare_text" with an input comprising the list of products peviously located in "prd_similar_by" entry. This routine scans the memory directly to locate the "prd_rel_info(ProductsInTheLeftSideOfRelation, GeneratedWord, ProductsInRightSideOfRelation, EntireListOfProducts, NameOfCategory, NameOfOriginalAttribute)" entries that contain said list of similar products in EntireListOfProducts. Once found, "Construct_relational_compa- re_text" will convert both ProductsInTheLeftSideOfRelation and ProductsInRightSideOfRelation to strings in a manner described above, choose a random line of text of the type "relational_text" from the library and pass the relevant information to "cmp_SubstVars" to perform the substitution of variables. The result string is also saved in the memory for future use.

[0058] Note: when only relational compare is used, "construct_relational_c- ompare_text" also performs these steps: it unifies EntireListOfProducts to a string by the same method used in "construct_similar_products_text", get the proper language templates for NameOfOriginalAttribute, choose a random library text string and call "cmp_SubstVars" to create the final line of text. This is done to fullfill the mission that otherwise would be performed by "construct_similar_products_text"--that is, showing the similarity of said list of products. That line is also passed to "update_compare_text" and by this "construct_relational_compare_text" finishes it's mission and exits. The next step, is to process the so-called "additional information" for said list of similar products. For this purpose, "construct_compare_text" will launch the routine "construct_add_info_products_text". This routine is given the initial list of similar products as an input, so it may process the list of products as follows: find all "additional_info" and

"prd_rel_info" entries in the memory for each product, look if same entries exist for any of the rest products in the list and eventually group the topic-value pairs from both entry types to a string by placing them in the memory, calling unify_top_val, unify the products list and launch "cmp_SubstVars" followed by "update_compare_text". Note that whenever an entry that fulfills said conditions is found it is removed from the memory to avoid finding it again and mentioning the information it represents more than once.

[0059] After this was done for each product in the list, exits and we're back to "construct_compare_text". At this point it's safe to say we've processed the list from the original "prd_similar_by" entry and we can now proceed to the next entry of the same type. When there are no more similar products lists (i.e. no more "prd_similar_by" entries in the memory) "construct_compare_text" will proceed to construct a natural language representation for the products that have nothing in common with any other products, i.e--the "prd_distinct_by(TopicValuePairs, NameOfProduct)" and the rest of "prd_rel_info(NameOfScale, NameOfProduct, NameOfAttribute)" entries. "Construct_compare_text" will launch "construct_distinct_text" to process said entries and generate the natural language output. "Construct_distinct_text" will group the topic-value pairs present in a given "prd_distinct_by" entry by a call to "unify_top_val", previously asserting to the memory the flag "_singl" (since we are discussing one single product here). After this, "construct_distinct_text" will call "update_compare_text" to append the string to the previous text.

Other paragraphs in Tavor cited by the Examiner in support of his assertion that Tavor teaches feature text snippets and user profile text snippets, do not describe or suggest the development, use or existence of user profile text snippets, as demonstrated in the Appeal Brief.

In conclusion, the Applicants respectfully submit that the rejections and the argumentation in the Examiner's Answer are in error as detailed in the Appeal Brief and in this Reply Brief. The independent Claims 1 and 8 in the present application clearly provide for the method of the invention to prepare a personalized recommendation of a product featuring dynamically generated fluent text that is used to convey a product analysis and recommendation tailored to the user requirements and preferences by the combination of generic phrases, feature text snippets, and user profile text snippets. Neither the Tavor reference, nor the Mikurak reference, nor the combination of these two references, shows or suggests all of the features of the Applicants' method and said combination does not result in the present invention.

Therefore, it is respectfully suggested that the rejection of claims pending in the current applications is in error.

Respectfully submitted:
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